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ABSTRACT

Literature is reviewed regarding the impact of physical activity on development in mildly handicapped (educable mentally retarded and learning disabled) students. Studies showing improvement in self concept after participation in a motor development program are cited. Risk taking in the mildly retarded is examined, and the implications of a change toward optimal risk taking behavior are thought to involve improved self concept and peer relations. Findings of relationships between motor proficiency and improved physical fitness as well as intellecutal development are pointed out. The authors conclude that a structured activity program should have significant implications for the development of mildly handicapped children. (CL)

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# The Effects of Physical Activity on Self Concept, Risk-Taking Behaviors, and Motor Functioning in Mildly Handicapped Individuals: A Literature Review

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# The Effects of Physical Activity on Self Concept, Risk-Taking Behaviors and Motor Functioning in Mildly Handicapped Individuals: A Literature Review

## Introduction

Physical activity has a profound and measurable effect on the growth and development of the human body. As this maturation process is a complex phenomenon comprised of many variables, it is reasonable to assume that physical activity exerts varying degrees of influence on different developmental factors. The purpose of this article is to review the professional literature that specifically relates to the impact of physical activity on three of these factors--self concept, risk-taking behaviors, and motor functioning--as they pertain to mildly handicapped children and youth. For purposes of this article, mildly handicapped individuals will be defined as those classified as educable mentally retarded and specifically learning disabled.

## Self Concept

The self concept is an important construct in the development of any child, but is particularly important for handicapped children. Psychologists and educators have postulated that the self concept may be the most central concept in the psychology of human behavior (Epstein, 1973, Perkins, 1958; Wylie, 1974). Wylie (1974) stipulated that

> ...almost all of the theories of personality which have been put forth within the last 3

> decades assign importance to a phenomenal and nonphenomenal self concept with cognitive and moral attributes. (p.3)

The first step in discussing self concept is to formulate an operational definition. Most definitions of self concept can be traced to James (1910), who defined self concept as the individual's subjective view of what he or she really is. That the self concept is comprised of the individual's perceptions beliefs, feelings, and attributes of what he is has been expressed by other investigators (Combs & Sopher, 1963; Cooley, 1902; Coopersmith, 1967; Cratty, 1969; Gergen, 1971; James, 1910; Johnson; 1962; Perkins, 1958; Rogers, 1951; Snygg & Combs, 1949; Wylie, 1974). Rogers (1951) stipulated that the individual's self concept includes only those characteristics that the individual is aware of and over which he believes that he has control. Mead (1934) expanded this concept to include the individual's concern for how others react to him. Lecky (1945) described the self concept as the nucleus of the personality and Fitts (1972) (c.f., Mead, 1934), described self concept as the frame of reference through which the individual interacts with the world.

Many self concept theories are derived from the theoretical formulations of James (1910), one of the first psychologists to write extensively on the construct of self. Along with James, those behavioral scientists who believed that the self concept was one of the most central concepts in psychology included

Cooley, Mead, Lecky, Sullivan, Snygg, Combs, and Rogers. They considered the self as consisting of those variables the individual viewed as belonging to himself and that were capable of affecting his well-being. Cooley (1902) introduced the "looking-glass self" concept in theorizing that the self concept develops from the individual's concern about how others react to him. Therefore, to behave accordingly, he learns to perceive the world as they do. Mead emphasized that the most important element in the child's self concept development is learning to imitate behaviors observed during play and through observation of "significant others" (Mead, 1934). Lecky identified the self concept as the nucleus of personality. He postulated that the self concept has a controlling effect on behavior, and the child will resist learning what is inconsistent with his self concept and learn what is consistent with this image. Lecky also maintained that the primary means of preventing failure was to first change the self concept. This premise stipulated that children behave according to how they perceive themselves in terms of each other. If the child perceives himself as a failure, he will perform consistently with that self concept. He stipulated that most failures in school were due to active resistance by the child in order to maintain a consistent self concept. Combs, Snygg, and Sopher believed that the child's perceptions of himself are important as causative agents of behavior. Self concept is learned as a consequence of the child's interaction with the environment and in particular with "significant others". Behavior then is a function of how the individual perceives his environment (Combs & Sopher, 1963;

Snygg & Combs, 1949). Rogers (1951) agreed with Snygg et al. in that the individual's perception of himself is the central factor in influencing behavior. He also emphasized that there is a fundamental need in everyone to maintain and enhance the self.

Epstein (1973) stated that the fundamental purposes of self concept include: (a) optimizing the pleasure/pain balance; (b) maintaining self-esteem; and (c) organizing data from experience for increased effectiveness in coping with the environment. He theorized that the self concept should be expansive and allow for coping with a variety of experiences. Brandon (1969) remarked that there is no value judgment more important to the individual than the self concept he builds for himself. Jersild (1952) and Johnson (1962) summarized the theory of self concept and stipulated that the self, although highly stable, is malleable and can be enhanced by certain ways of thinking, talking, and living.

Self concept is linked to the total development of the child. Perkins (1958) postulated that the self concept can be used as a tool for better understanding children and as a vital aspect of learning and development. Perkins stated that

> Specifically, the self concept can be used in education (a) as a psychological construct which enables teachers, counselors, parents, and others to achieve with training deeper understandings and insights into the behavior and development of children, and (b) as a vital and important

> aspect of learning and development which the school through its educational processes seeks to promote and foster in every child. (p.203)

Jersild (1952) stated that children with an inadequate self concept have problems learning. Combs and Sopher (1963) agreed with this position. Studies have shown that reading success is largely dependent upon the child having a positive self concept (Berretta, 1970; Coley, 1973; Sebeson, 1970). In essence, poor reading reinforces a poor self concept. There are also indications that the self concepthas a direct influence on intellectual and academic achievement (Fink, 1962; Fitts, 1972; Wylie, 1974). In addition, reliable data indicated that self concept is an important factor in anti-social behavior, competent behavior, adapted behavior, and human performance (Thompson, 1972).

Learning problems can result from an inadequate self concept as well. Many investigators support the premise that learning disabled children exhibit lower self concepts than non-learning disabled children (Larson, 1973; Rosser, 1973). In fact, this will usually be cyclical in nature (c.f., Lecky, 1945). A low self concept will cause academic failure which in turn reinforces the low self concept. This is seen in the low self concept of disadvantaged children (Caplin, 1969; Carroll, 1967; Graves, 1972; Lord, 1971) and mentally retarded children (Collins, 1970; Cratty, 1969). A sudden drop in self concept is often more distressing to the individual than a chronically low level. Therefore, individuals tend to lower their self concept before someone else can. This is

particularly accurate for the handicapped (Epstein, 1973). Arnheim, Auxter, and Crowe (1977) remarked :

> How the handicapped child views himself as a person is extremely important to his total psychosocial adjustment. The child constructs a sense of uniqueness and exclusiveness from the responses he elicits from other persons. If, for the most part, others' reactions are affirming, then a positive self perception is acquired. If, however, a negative response is elicited, a variety of defense mechanisms may be used unconsciously by the disabled person to protect himself against the threat to self-esteem and the feelings of pain and anxiety (p.42)

Arnheim et al. (1977), Epstein (1973), Humphrey (1974), and Johnson (1962) expressed the belief that the child's self concept is highly predicated upon what he can do with his body. If the child's physical base in moving and playing is inadequate, the child will not be able to subsequently move safely and with confidence. This effectively limits successful experiences and damages the self concept (Cratty & Martin, 1969; Johnson, 1962; Johnson & Fretz, 1967b; Tyler, 1972). Therefore, it seems logical that a physical activity program designed to improve the physical base might also elicit positive ameliorations in the child's self concept. As the child gains control of his body, he gradually becomes better able to function on an equal level

with his peers and enhances his self-respect (Fretz, 1974; Johnson and Fretz, 1967b; Johnson et al., 1968). Many investigators believe that appropriate movement experiences improve self concept, at least during certain periods of development. Therefore, the implications for education, mental health, developmental programs, and therapy are significant, particularly as they apply to handicapped students (c.f., Johnson, 1962).

Gains in self concept through physical activity programs have also been empirically demonstrated. Corder (1969) investigated the effects of a planned 30 day physical training program on 30 educable mentally retarded girls. The 11-15 year old girls who took part in the 30 hours of physical education exhibited a significant increase in self concept and physical development when compared to girls who were in the control group. He concluded that increased physical development appears to enhance self concept.

Platzer (1976) structured a 30 minutes/day, 5 day/week perceptual-motor training program for 40 children, 4-5 years old. She found that after 10 weeks the experimental group had a significantly higher self concept than the control group as measured by the Goodenough House-Tree-Person Test. In discussing her results she stated

> A very important component of self concept however, is the child's feelings about his capacity to perform motor tasks. (p.423)

She also remarked that it is uncertain whether the perceptual-motor training program or the special attention paid to the experimental group was the causative agent that resulted in the increased self concept.

In a study of learning disabled children enrolled in a summer camp for the learning disabled, Lewko (1970) reported a high but non-significant trend toward an improvement in self concept. The 44 males, 7½-13½ years old, were assessed using the Colvin Silhouette Test and nonparametric statistics. This trend was concomitant with a change in physical performance.

Puretz (1973) studied the effects of a one-term school program of modern educational dance on the self concept of 10-12 year old disadvantaged elementary school girls. A group of 75 girls were assigned to the regular physical education program (control) while another group of 75 girls were placed in an experimental dance program as a substitute for physical education. She found a significant difference between the groups in favor of the dance group. A follow-up evaluation indicated these changes were of a long term nature.

In research involving the Children's Health and Developmental Clinic (CHDC) at the University of Maryland, Johnson et al. (1967) employed the Which Is Me Test to examine self concept in 62 males enrolled in a CHDC summer clinic. The clinic boys (5-14 years) were compared with a similar group comprising a control group. Although they did not find significant differences between the groups, they did find increased in associated areas and a desire by the boys to become closer to their adult male clinicians. Also using the

summer clinic, Johnson et al. (1968) investigated changes in the child's self concept and ideal self concept. The summer clinic program was 6 weeks in duration and had sessions of 1-2 hours/day, 2 days/week. A group of 74 children were studied using a self concept device developed especially for children in the clinic. They reported significant improvements in most areas of self concept including: (a) willingness to be near clinicians; and (b) willingness to interact with larger groups of children.

Johnson and Fretz (1966), also using the summer CHDC program, found significant preclinic to postclinic changes in self concept as exhibited by the Which Is Me Test. They reported significant changes in the children's ability to cope with frustration as well as improvements in the children's ratings on a developmental scale and a behavioral scale. Fretz and Johnson (1973) utilized the Spring, 1968, program to investigate behavioral changes frequently reported by parents and teachers. They studied 22 clinic males, 5-10 years old, and 15 "waiting list" control subjects. The spring version of the CHDC was 1 hour/week for 8 or 9 weeks. They found a significant improvement in the children's social relationships and in their ability to just "get along". As Platzer (1976) had done, Fretz and Johnson questioned

> ...ascribing the changes to participation in the physical developmental clinic, e.g., would simply spending 1 hour per week with

a child in a one-to-one relationship
accomplish the same results. (p.862).

## Risk-Taking

The relationship between self concept and risk-taking has been reported by several investigators. Fuhrer (1975), in a study of 26 disadvantaged 4 year olds, found a signficiant relationship between high risk-taking, mature cognitive behavior, and high self-esteem. Poe (1971) also reported a significant relationship between self concept and risk-taking, particularly between openmindedness and risk-taking.

Fretz and MacDonald (1970) concluded that there is a paucity of research on the value of risk-taking as a desired component of a therapeutic treatment program. This might be due to a lack of interest in identifying changes resulting from risk-taking behaviors. However, West et al. (1970) and Fretz et al. (1968) suggested that the constructive modification of risk-taking behavior could be a major and desirable goal of a therapeutic physical activity program.

Risk-taking behavior has been defined as the willingness to risk the high probability of a negative outcome for the low probability of a positive outcome (Edelman, 1971). Risk-takers could be subdivided into three levels: (a) high risk-takers; (b) optimal risk-takers; and (c) low risk-takers. High risk-takers are those who take an inordinate risk in relation to the probability of success; optimal risk-takers realize the probability of success with the decision to maximize payoff; low risk-takers are those so

threatened by failure that they elect to risk little or nothing at all. Atkinson and Feather (1966) described the "failure threatened personality" as one who "given an opportunity to quit an activity that involves evaluation of his performance...he is quick to take it" (p.45). West et al. (1970) reported that clinic subjects have probably experienced greater amounts of failure than non-clinic peers.

In a study of 62 boys, 5-14 years old, Johnson et al. (1967) reported significant improvements in risk-taking behavior following a summer session of the CHDC. THey also reported that clinic subjects were often unrealistically high or low risk-takers. In a similar study, West et al. (1970) measured the risk-taking behavior of 49 boys, 5-13 years old, after participation in the summer clinic. They reported: (a) clinic subjects initia-ly are lower risk-takers than non-clinic subjects; (b) there was a significant change toward optimal risk-taking in the clinic group; and (c) there was no such significant change for the control group.

In an earlier CHDC study, Fretz and Johnson (undated) employed the traditional ring toss to assess risk-taking behavior before and after a summer clinic. They reported only a slight increase in risk-taking behavior, probably because the trend toward greater risk-taking was counteracted by an increased desire for success in skill and achievement.

These studies have indicated that clinic subjects may show improvement toward optimal risk-taking behavior by the end of the clinic program.

> The significant movement toward optimum risk-taking indicated that shy and withdrawn boys now willingly take more chances and that boys who had previously taken chances with the "odds against them", almost assuring themselves of failure, now take more reasonable chances, reducing their failing experiences. (Johnson et al. 1968, p.17)

Therefore a change toward optimal risk-taking behavior may have important implications in self concept and peer relations as well.

## Motor Proficiency

A child lives in a world of movement. His ability to react socially, emotionally, physically, and possibly even intellectually may be based on early motor success. It is therefore logical to examine the contributions of physical activity on the physical and motoric development of children. The literature on motor proficiency is entrenched in the controversy over the role of motor ability in the functioning of young children. Several authors such as Piaget (Flavell, 1963), Getman (1971), and Kephart (1960) have stated that by developing motor abilities (in particular perceptual-motor abilities), cognitive, social, and emotional realms can be improved as well. In view of this conclusion, it seems plausible that a program resulting in increases in motor

ability may also produce a concomitant increase in other developmental areas as well. In fundamental terms, the acquisition of motor skills may be extremely important, even if it means only that the child has gained increased control of his physical performance.

Keogh (1978) suggested that movement can be used as: (a) skill performance (body control); (b) a facilitator of cognitive, social, emotional, and physical domains; and (c) a measure of other processes (e.g. the child draws a picture to indicate what he perceives). Thus through confidence in movement the child may begin to develop in a totalistic sense.

With the handicapped child, particularly the motorically impaired or "clumsy child", sufficient movement confidence may not be attained. Therefore, indirect experiences are not fully realized (Keogh, 1978). Several authors have indicated that this is indeed the plight of the handicapped child. This is primarily due to the fact that his performance skills are not strong enough to allow transfer of movement experiences to other domains of functioning. There is general agreement in the literature that the handicapped child, and in particular the educable mentally retarded child, often lags behind his normal counterpart in both fine and gross motor skills (AAHPER, 1968; Francis & Rarick, 1959; Hayden, 1964; Malpass, 1959; Oliver, 1972; Rarick, Dobbins, & Broadhead, 1976; Rarick et al.,1970; Sloan, 1951; Stein, 1963, Widdop, 1967). This level of retarded motor development has often

been related to level of intelligence. That is, the greater the mental deficiency, the greater the retardation in the acquisition of motor skills (Rabin, 1957; Rarick et al., 1970; Sloan, 1951; Tredgold, Tredgold & Soddy, 1956; Widdop, 1967). Thus, it appears that the child's intellectual and/or academic difficulties affect the rate of acquisition of new motor skills. Rarick et al. (1976) contended that this deficit in skills is at least partially attributable to a lack in appropriate motor opportunities for the handicapped child. They remarked

> The ultimate aim is to equip them with the skills and abilities needed to function satisfactorily in the mainstream of society. It is the position of the writers that the motor domain offers perhaps the best single avenue for helping the retarded child move toward that end. (p.117)

There have been numerous physical activity programs designed and implemented to improve the motor efficiency of the handicapped child. Beter (1969) ran a four phase program for 40 educable mentally retarded junior high school students. The program included: Group 1--concentrated physical education plus auditory and visual perceptual reading; Group 2--physical education and classroom instruction; Group 3--special reading and classroom instruction; and Group 4--traditional special education. After 27 weeks he found that Group 1 was significantly better than the other groups in terms of improved motor fitness.

Elrod (1972) studied 30 educable mentally retarded children, 9-12 years old, using the case study technique. The 15 members of the experimental group were exposed to a program of perceptual-motor activities and music training while the control group received only music training. He reported that the perceptual-motor and music programs brought about greater gains in perceptual-motor skills than music alone. Both groups exhibited increased social and emotional behaviors.

In a study of 42 educable mentally retarded boys, Solomon and Pangle (1967) concluded that an 8 week physical education program administered 45 minutes/day could increase physical fitness levels significantly to allow for favorable comparisons with a non-retarded group. These gains were still significant over a 6 week follow-up session. In a similar program of 1 hour/day for 6 weeks, Corder (1969) reported that 30 educable girls exhibited significant increases in physical development.

Zahar (1973) investigated 56 mentally retarded children, 6-18 years old to ascertain the effects of a physical education program on the total functioning of the child. After a 10 week program of 1 hour/day, he found significant improvement in perceptual-motor and adaptive functioning. Likewise, Rarick et al. (1976) reported that in 275 educable and 206 minimally brain-injured children, experimental subjects exhibited significant increases over control subjects in motor, intellectual, and emotional development. They also noted that those subjects exposed to individualized teaching did better than those in group situations.

Cavanaugh (1968) studied 10 educable and 8 minimally brain injured children engaged in a 22 week physical education program. The children participated in 30 minutes of exercise plus 60 minutes of vigorous recreational games per day. He reported significant gains in strength, power, balance, agility, cardio-vascular endurance, coordination, and speed of response. He stipulated that although all tasks were significant, least improvement was noted in the more complex tasks requiring several different responses.

In learning disabled children, Evans (1970), Lewko (1970), and Reeve (1976) found significant improvements in motor ability after a program of physical activity. Evans (1970) and Reeve (1976) utilized perceptual-motor training programs for 10 weeks and 8 weeks, respectively. Lewko (1970) used a summer residential camp for the learning disabled to elicit changes in motor behavior.

Several studies have examined the effect of the CHDC on the motor ability of clinic subjects (Fretz et al., 1969; Johnson & Fretz, 1967a; Johnson et al., 1967). These studies indicated that: (a) clinic children were motorically on the average, two to two and a half years behind non-clinic children of their own age; and (b) the CHDC could produce a significant increase in motor functioning. Fretz et al. (1969) investigated the changes in perceptual-motor skills in 53 children enrolled in the spring term of the CHDC. These males, 5-11 years old, improved significantly in all perceptual motor measures. They concluded that the CHDC could contribute to the development of generalized motor performance. In similar studies, Johnson and Fretz (1967a),

examined 79 boys while Johnson et al. (1967) assessed 62 boys. They ascertained that participation in the CHDC significantly increased the neuromotor functioning of these children.

## Conclusion

The importance of self concept, risk-taking behaviors, and motor performance are well documented in the literature. Their value is particularly significant for handicapped children and youth. Several authors have also postulated that one of the most productive modalities in which to affect these domains would be through physical development. Thus, it is plausible to theorize that a structured activity program designed to aid the development of the total child, through the medium of physical play, should have significant implications for the growth and maturity of mildly handicapped individuals.

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